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TITLE: Water soluble or water dispersible hot-melt adhesive compositions based on polyvinyl alcohol with residual acetate groups and process for producing the same

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Brief Summary Text - BSTX (6):

As water soluble polymers which melt by heating, vinyl acetate-vinyl pyrrolidone copolymers and water soluble nylons are known. However, they cannot be used for bookbinding or sealing corrugated paper and cartons because they have so high a viscosity that commonly used applicators cannot be used to apply the same. Further, they have insufficient water dispersibility or low adhesive properties. Further, remoistenable hot-melt adhesive compositions containing partially hydrolyzed polyvinyl acetates having a degree of hydrolysis of about 50 to about 85 mol% as a main ingredient, which can be used for envelopes, postage stamps, gum tapes or wall paper, etc., have been described in U.S. Pat. No. 3,597,264. In this patent, polyvinyl alcohol having an acetate group content of about 15 to about 50 mol% (the adhesive ingredient) is produced by acid hydrolysis of an aqueous dispersion of polyvinyl acetate (hereinafter referred to as PVAc). In general, acid hydrolysis has the following defects, as described in "Polyvinyl Alcohol", pages 91 - 96, edited by C. A. Finch, (published by a Wiley-Interscience Publications (1973)): A large amount of acid catalyst and a long period of time are required to obtain a desired degree of hydrolysis because the rate of the hydrolysis reaction is very low as compared with that of alkaline hydrolysis. Further, it causes a deterioration of the quality of the polyvinyl alcohol (hereinafter referred to as PVA) because a large amount of salts are formed by neutralization with alkalis after the reaction because of the use of a large amount of acid catalyst, which salts are retained in PVA. Further, it is necessary to remove a large amount of water by evaporation in order to obtain PVA because the hydrolyzed product formed by the hydrolysis in an aqueous medium dissolves in water. As described above, acid hydrolysis is economically disadvantageous as compared with alkaline hydrolysis. Therefore, acid hydrolysis has not be utilized hitherto for the industrial production of PVA.